

In the Claims:

1. (Currently Amended) An initiator explosive device for detonating a second explosive comprising:

porous nanocrystalline silicon; and

~~a solid state oxidant~~ an explosive solid state oxidant disposed within pores of said porous nanocrystalline silicon

wherein said porous nanocrystalline silicon comprises a thin film.

2. (Previously Presented) The explosive device of claim 1 wherein said solid-state oxidant comprises a nitrate salt.

3. (Previously Presented) An initiator explosive device for detonating a second explosive comprising:

porous nanocrystalline silicon; and

a solid state oxidant nitrate salt disposed within pores of said porous nanocrystalline silicon, wherein said nitrate salt is selected from the group consisting of sodium nitrate, potassium nitrate, ammonium nitrate, magnesium nitrate, calcium nitrate, and gadolinium nitrate.

4. (Original) The explosive device of claim 1 wherein said solid-state oxidant comprises a perchlorate salt.

5. (Original) The explosive device of claim 4 wherein said perchlorate salt is selected from the group consisting of sodium perchlorate, potassium perchlorate and lithium perchlorate.

6. (Original) The explosive device of claim 1 wherein said solid-state oxidant comprises a fluoride salt.

7. (Original) The explosive device of claim 6 wherein said fluoride salt is selected from the group consisting of potassium fluoride, potassium hexafluorophosphate, and sodium tetrafluoroborate.

8. (Previously Presented) The explosive device of claim 1 wherein said solid state oxidant comprises a solid state oxidant selected from the group consisting of PETN, a metal azide, and TNT.

9. (Previously Presented) The explosive device of claim 1 wherein said solid-state oxidant is baked into the pores of said porous nanocrystalline silicon.

10. (Withdrawn) The explosive device of claim 1 wherein said nanocrystalline silicon comprises a nanowire.

11. (Canceled)

12. (Withdrawn) The explosive device of claim 1 wherein said nanocrystalline silicon comprises a powder.

13. (Canceled)

14. (Previously Presented) A method for detecting a target analyte comprising:

providing an initiator explosive device of nanocrystalline silicon having a plurality of pores disposed therein; and a solid state oxidant disposed within said pores;

igniting the porous nanocrystalline silicon containing the target analyte and the oxidant; and

measuring an emission spectrum for the presence of the target analyte.

15. (Previously Presented) The method of claim 14 further comprising providing a porous nanocrystalline silicon substrate in the form of a thin film.

16. (Canceled)
17. (Original) The method of claim 14 further comprising selecting the oxidant to be gadolinium nitrate.
18. (Previously Presented) The method of claim 14 further comprising baking the oxidant with the nanocrystalline silicon so that the oxidant is baked into pores of the porous nanocrystalline silicon.
19. (Original) The method of claim 14 further comprising absorbing from between approximately 1 and 10 micro liters.
20. (Original) The method of claim 14 further comprising igniting by resistively heating a silicon filament.
21. (Original) The method of claim 14 further comprising photographing the emission spectra.
22. (Original) The method of claim 21 further comprising subjecting the photograph to spectrometry analysis.
23. (Previously Presented) The method of claim 14 further comprising absorbing a predetermined amount of a solution containing the target analyte on the porous nanocrystalline silicon.
24. (Previously Presented) The method of claim 14 further comprising absorbing a predetermined amount of ambient gas containing the target analyte on the porous nanocrystalline silicon.

25. (Previously Presented) The method of claim 14 further comprising absorbing a predetermined amount of ambient liquid containing the target analyte on the porous nanocrystalline silicon.

26. (Previously Presented) The method of claim 14 further comprising absorbing a predetermined amount of ambient particulate matter containing the target analyte on the porous nanocrystalline silicon.

27. (Withdrawn) A method of using an initiator explosive device to initiate an explosive reaction comprising:

- creating a bridge wire composed of porous silicon;
- coupling the bridge wire to an explosive; and
- heating the bridge wire.

28. (Previously Presented) A propulsion system for a MEMS device comprising:

- an explosive device according to claim 1 wherein said explosive device is configured to be a cap.

29. (Previously Presented) An initiator explosive device for detonating a second explosive comprising:

- porous nanocrystalline silicon; and
- a solid state oxidant disposed within pores of said porous nanocrystalline silicon, wherein said porous nanocrystalline silicon comprises one of a film or thin film of porous silicon electrochemically etched into a single crystal or polycrystalline silicon substrate, a nanocrystalline silicon nanowire, and a powder of porous crystalline silicon particles.

30. (Previously Presented). The device of claim 29, wherein said porous nanocrystalline silicon comprises a nanowire.

31. (Previously Presented) The device of claim 29, wherein said porous nanocrystalline silicon comprises a powder.